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The ultimate crystals of each fern-like flake were prisms and hexagonal plates. The parts formed by prisms and very small hexagonal plates corresponded to the rachis and basal portions of pinnæ, while the expanded portions of pinnæ and pinnules were represented by hexagonal plates alone. The terminal plates were the largest. They diminished in size as they approached the axils, where they were replaced by delicate elongate prisms.

These fern flakes are simply modifications of star-flakes. Each fern-flake is one ray of a star, the point of attachment to the twig or wire corresponding to the centre of the star. Their attachment to a fixed support was a condition of unusual development, some being more than one-half inch in length. The completed star would have been gigantic compared with a star-flake formed in a snow cloud.

Some of these fern-flakes were still further modified so as to represent a half ray, resembling one-half of a fern frond divided longitudinally. Perhaps in such a one the axis of the fern-flake represented the line of demarcation between still air and moving air.

This was a kind of snow-cloud hanging on the trees, formed under the concurrence of particular conditions of temperature, moisture, and atmospheric movement. The conditions that favor the fringe-like, or one-sided, arrangement of frost must be very unusual.

W. P. SHANNON.

Greensburg, Ind.

On the Use of the Compound Eyes of Insects.

MY personal knowledge of Dr. Dallinger enables me to accept without hesitation his statement in *Science* of Jan. 6 (p. 11) that the wood-cut on page 908 of "The Microscope and its Revelations" corresponds in every particular with the photograph from which it was taken. I should, however, like to put myself right with your readers by explaining that the photograph to which I referred as "the original" was a positive print exhibited at the

meeting of the Royal Microscopical Society on Nov. 19, 1890, by Professor Bell, who said that it had been sent by Professor Exner to Dr. Sharpe, by whom it was lent for exhibition on that occasion. I examined this photograph with much interest at the close of the meeting and took the opportunity of making a sketch of it in my note-book at the time. This sketch undoubtedly shows the letter R to be the right way about, with the church facing towards the left; and although after a lapse of two years it might not have been possible to trust entirely to memory in the matter, it is impossible to suppose that I made otherwise than a true copy of the picture which I held in my hand. I therefore infer that the photograph to which Dr. Dallinger refers must have been printed the reverse way to the one which I saw as above stated.

R. T. LEWIS.

Ealing, London, S. W., England.

AMONG THE PUBLISHERS.

THE publishers of Mrs. Helen Mather's "One Summer in Hawaii," the Cassell Publishing Company, announce a new edition of that book. The present state of affairs in Hawaii have renewed interest in the subject. Mrs. Mather describes the people, their manners and customs, the natural resources of the island, and gives a personal description of Queen Liliuokalani, by whom she was entertained. The book is filled with illustrations showing the scenery and public buildings, and gives portraits of the Queen and her predecessors in office.

—G. P. Putnam's Sons announce for early publication "The Empire of the Tsars and the Russians," by Anatole Leroy-Beaulieu, translated from the third French edition by Mme. Ragozin; "Outlines of Roman History," by Professor Henry F. Pelham, of Oxford University, a work particularly designed for reading classes and higher-grade students; "Studies of Travel in Greece

CALENDAR OF SOCIETIES.

Anthropological Society, Washington.

Feb. 21.—Mrs. Matilda Cox Stevens, The Foundation of the Zuni Cult; Miss Kate Foote, Dual Civic Functions: A Study in the Evolution of Institutions; Thomas Wilson, Early Man in the Mississippi Valley.

Biological Society, Washington.

Feb. 25.—Sheldon Jackson, The Introduction of Reindeer in Alaska; M. B. Waite, Variation in the Fruit of the Pear due to Difference of Pollen; E. M. Hasbrouck, On the Development of the Appendages of the Cedar Waxwing; F. A. Lucas, The Food of Humming-Birds.

Philosophical Society, Washington.

Mar. 1.—Waldemar Lindgren, Two Neocene Rivers of California; Marshall McDonald, A Study of the Gulf-Stream in Relation to the Tile Fish.

Appalachian Mountain Club, Boston.

Feb. 27.—C. Willard Hayes, Through Alaska with Lieutenant Schwatka; an account of exploration in the Yukon Basin in 1891, and the first crossing of the St. Elias-Wrangell Range.

Mar. 8.—Edouard A. Martel of Paris, will be read by Frank W. Freeborn, The Land of the Causses. The Caves of Bramabiau, Dargilan, Padirac, etc.; Philip Stanley Abbot, His Ascent of the Weisshorn.

Society of Natural History, Boston.

Mar. 1.—E. S. Morse, A Curious Aino Toy; C. Willard Hayes and M. R. Campbell, The Structural Features (Geomorphology) of the Southern Appalachians.

Agassiz Scientific Society, Corvallis, Ore.

Feb. 8.—Charles Pernot, Smokeless Fuel.

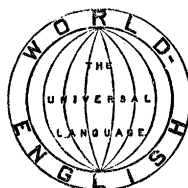
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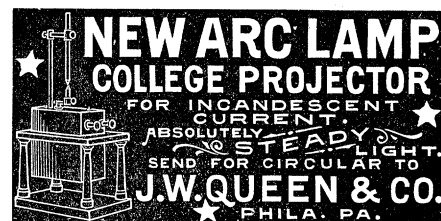
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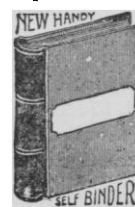
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and Italy," a volume of historical and archaeological papers by the late Professor Freeman; "Venice: an historical sketch of the Republic," by Horatio F. Brown. New issues in their various series will be "Napoleon," by W. O'Connor Morris, in Heroes of the Nations; "Story of Poland," by W. R. Morfill, in Story of the Nations; "The Silver Situation in the United States," by Professor F. W. Taussig, in the Questions of the Day Series. "Vertebrate Embryology," by Dr. A. Milnes Marshall, professor of zoölogy in Owens College, England, and C. H. Hurst, demonstrator of zoölogy in Owens College; and "A Junior Course in Practical Zoölogy," by the same authors.

—D. Lothrop Company announce "In the Wake of Columbus," an illustrated account of travel along the track of the great discoverer; "From Cordova to Cathay," by Frederick A. Ober, who was the special Columbus commissioner sent out by the World's Fair directory to gather facts and relics.

—The January *Century* has been out of print for some time, and of the February number the publishers now have unfilled orders for more than five thousand copies awaiting a new edition. A large first edition of the March *Century*, containing the Reminiscences of Napoleon at Elba, will be ready on the first day of March.

—At the recent meeting of the Indiana Academy of Science, Dr. Robert Hessler, of Indianapolis, read a paper on "An Extreme Case of Parasitism." It was a case of that extremely rare and almost extinct form of the itch known as "Norway Itch," the *Scabies Norvegica* of Hebra, and who first described it in 1852. The paper was prefaced by some remarks on the itch mite and on the itch. It was not until 1835 that the mite *Sarcoptes scabiei*, De Geer, was universally recognized as the cause of the itch. There is no uniformity among medical authors concerning the scientific names for the mite. *Acarus scabiei* and *Sarcoptes hominis* are frequently given in medical works. The size is also

variously given, from "very minute almost microscopic" up to "the size of a pin-head." Scabies, or the itch, is the result of the presence of the human itch mite on the body. Occasionally, although rarely, mites from the domestic animals produce a similar eruption on the human body. In an ordinary acute or epidemic case of the itch the number of mites is quite small, probably rarely exceeding one hundred adult animals. Norway itch is so rare that modern treatises on skin diseases, especially those of our country, do not describe it, very few even mention it. The writer is inclined to believe that a case of this kind corresponds, medically, to a "freak" or "sport" of the naturalist or evolutionist; it shows us what was formerly of frequent occurrence—owing to uncleanness and a want of proper parasitocides. The afflicted man when first seen was covered with thick, creamy-white, leathery scales. "He was covered with scales like a fish." Some of these scales measured over one inch in diameter and one-tenth inch in thickness. These scales were not crusts or scabs, they were overgrowths of the skin due to increased cell activity from the irritation of the mites. A constant shedding of these scales was going on, a handful could be gathered daily. In a search for the cause of this skin eruption, the doctor found the mites and at once established the diagnosis. The epithelium, that is, the scales, were found to be full of mites and eggs and riddled with burrows or passages. Under appropriate remedies the mites were soon exterminated. The cause of the disease once removed, the skin soon regained its normal character and the patient was cured. Dr. Hessler made a calculation of the total number of mites and eggs on the body of the man when first seen. Pieces of scale of a definite size were stained, imbedded, sectioned and mounted in serials. Diagrams were made of each section, indicating the position of the mites and eggs, and the count made therefrom. A simple calculation gave the figures for the entire body. Here are the results: Eggs and empty shells, 7,004,000; mites in all stages of development, 2,009,000.

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For sale, or for exchange for books on medicine or surgery, new editions only, a large geological library, containing nearly all the State and Government Reports since 1855. Will be pleased to answer letters of inquiry and give information. Address R. ELLSWORTH CALL, Louisville, Ky.

For exchange.—Slides of Indian Territory Loup Fork Tertiary Diatoms for other microscopic fossils. Address S. W. WILLISTON, Univ. of Kansas, Lawrence, Kans.

For exchange.—Will exchange an "Ideal" Microscope of E. and J. Beck, London, 2 eye pieces 3 objectives, 3 inch, 1 inch, 1-6 inch; bull's eye condenser on stand, substage condenser, mechanical stage, etc., for any of the leading makes of type writers. Particulars by mail. DELOS FALL, Albion College, Albion, Mich.

Sale, or exchange for similar material; Diatoms (*Isthmia nervosa*), unmounted, from San Francisco Bay. M. J. ELROD, Bloomington, Ill.

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For sale or exchange.—A private cabinet of about 200 species of fossils, well distributed geologically and geographically. Silurian, about 40; Devonian, about 50; Carboniferous, about 80; others, about 80. Frank S. Aby, State University, Iowa City, Ia.

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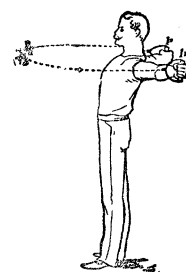
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